

## RQRA-1000-1500



### ELECTRICAL SPECIFICATIONS

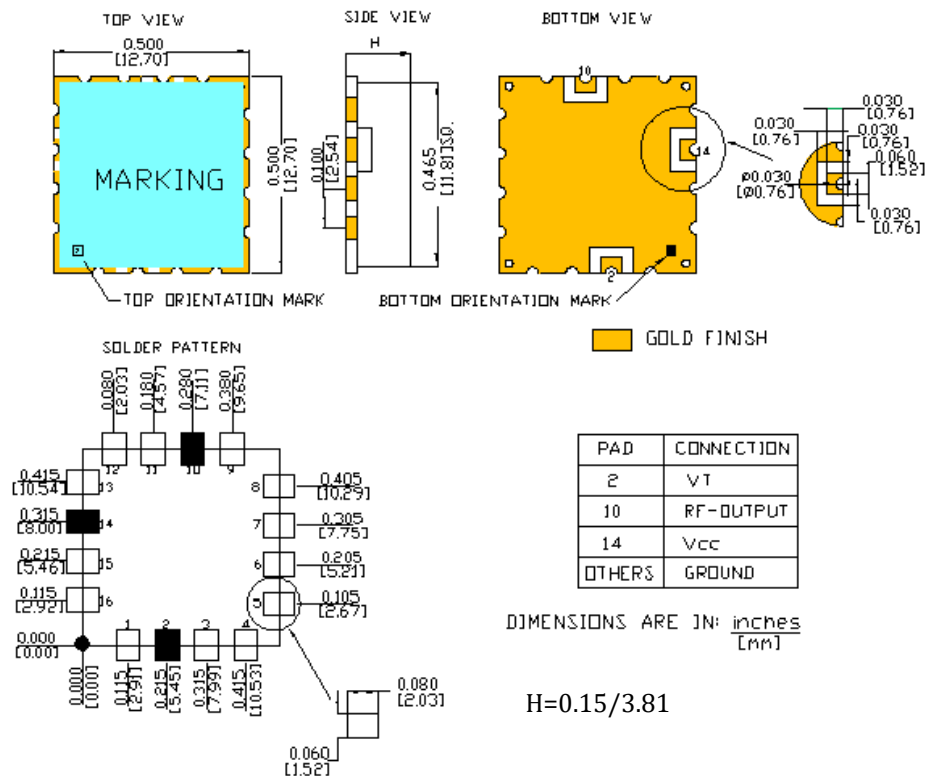
PARAMETER	CONDITION	SYMBOL	VALUE			UNIT
			Min.	Typ.	Max.	
Lower Frequency <sup>1,2</sup>	Tuning Voltage:0.5V	fo(Vt)			1000	MHz
Upper Frequency <sup>1,2</sup>	Tuning Voltage:4.5V	fo(Vt)	1500			MHz
Tuning Voltage		Vt	0.5		4.5	VDC
Supply Voltage		Vcc	2.85	3.0	3.15	VDC
Supply Current	Vcc=3.0V			10		mA
Tuning Sensitivity	Over Tuning Range, 0.5-4.5V	df/dVt		150		MHz/V
Pushing	Over Supply Variation	df/dVcc		10.0		MHz/V
Pulling <sup>1,3</sup>		df/dZI			4.0	MHz pk-pk
2 <sup>nd</sup> Harmonic	Vcc=3.0V	a(n*fo)		-10		dBc
Input Capacitance		C <sub>IN</sub>			30	pF
Operating Temperature Range		Ta	-40		+85	°C
Storage Temperature Range		Tstor	-45		+90	°C
Maximum Voltage	V <sub>cc(abs)</sub>				4.0	V
Moisture Sensitivity Level	MSL	JEDEC J-STD-2	1			
Termination Finish			Glass-reinforced laminate base and nickel-silver cover			
ESD Sensitivity	HBM	Human body model JESD22-A114		3		kV

### OUTPUT CHARACTERISTICS

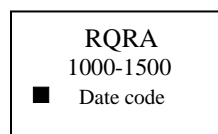
SINE-WAVE	PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
				Min	Typ.	Max	
	Sine Output Voltage Level	Pw	Output termination 50Ω	0	+3.5	+7.0	dBm
	Supply Current	Is	Vcc, ±5%		10		mA
	Output Load	O <sub>CL</sub>			50		Ω

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### MECHANICAL DIMENSIONS AND PIN FUNCTIONING



■ Marking:



Top View.

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### PHASE NOISE

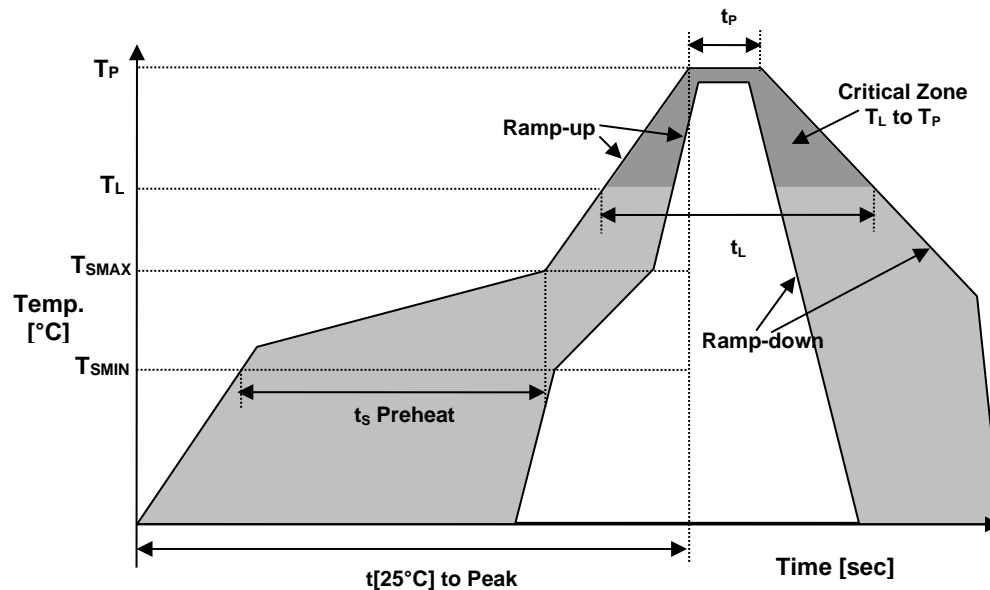
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min	Typ	Max	
SSB Phase noise	$\Sigma(\Delta f)$	$\Delta f=10\text{kHz}$		-95		dBc
		$\Delta f=100\text{ kHz}$		-115		

### COMMON SPECIFICATIONS

- 1.1 -Load impedance is 50 Ohms.
- 1.2- The frequency range is defined between the (max) lower frequency and (min) upper frequency.
- 1.3 -Pulling is measured with 12dB return loss, all phases.
- 1.4- Package outline tolerances are typ.  $\pm 0.30\text{mm}$  /  $\pm 0.012\text{inch}$  if not stated differently on the drawing.
- 1.5 -It is recommended to provide two bypass-capacitors (ceramic), from Vcc to Gnd,  $1\text{nF} \parallel 100\text{pF}$ .
- 1.6- Solder temperature (peak) is  $260^{\circ}\text{C}$  for 10-20s.

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### REFLOW PROFILE



Recommended Solder Reflow Profile		
Temperature Min Preheat	T <sub>SMIN</sub>	150°C
Temperature Max Preheat	T <sub>SMAX</sub>	175°C
Time (T <sub>SMIN</sub> to T <sub>SMAX</sub> )	t <sub>s</sub>	60-180 sec.
Temperature	T <sub>L</sub>	217°C
Peak Temperature	T <sub>P</sub>	260°C
Ramp-up rate	R <sub>UP</sub>	3°C/sec max.
Ramp-down rate	R <sub>DOWN</sub>	6°C/sec max.
Time within 5°C of Peak Temperature	t <sub>p</sub>	10-20 sec max.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t <sub>L</sub>	60-150 sec.

#### APPROVALS

Eng. approval, date:	CP	05/11/2021
Created by, date:	AR	05/11/2021
Revision:	A	